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Oceanographic coral records from South Western Caribbean: Isla Fuerte, Colombia

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The southwestern corner of the Caribbean Sea is considered a coastal warm pool oceanographically linked to the Panama Colombia Gyre. The atmosphere – ocean variability there is influenced by the Intertropical Convergence Zone (ITZC), the Andean river runoff, the northeasterly trade winds, and a tropical low level jet (San Andrés jet), all of them connected to global variability. This warm pool has a significant (>95%) warming trend (0.6°C between 1981 and 2000), with the warmest record just in front of the Sinu River, where Isla Fuerte is located, 11 km from the coast, to the western of Sinu Delta. Sea surface temperature (SST) and the Multivariate ENSO index have a significant (>95%) correlation of 0.4 with a 7 months lag. The Sinu River flow does not show a long trend between 1985 and 2000, but has a significant correlation with ENSO (0.5) with no lag. Two corals from Isla Fuerte, a Siderastrea siderea colony with a maximum length of 72.5 cm and a Montastrea annularis colony of 30.5 cm, were studied in order to test the climatic potential of these records and to understand the oceanographic variability at the SW Caribbean. Fluorescence has better resolution than density bands in both corals. Chronology based on them indicates an age of 127 and 32 years respectively. We present and discuss growth and Sr/Ca series. The signal is produced by the interaction between the river flow and local winds. The river reaches the island when northeastern winds deflect their plume to the east. However, there are not in situ instrumental records for calibration and interpretation of the signals and we used world data bases with low spatial resolution.